

ABSTRAK

DESSY HAQIKI WULANDARI. Pengembangan Buku Digital Interaktif berbasis RME untuk Meningkatkan Kemampuan Pemahaman Konsep Pecahan Siswa Kelas V Sekolah Dasar. Tesis. Medan: Program Pascasarjana Universitas Negeri Medan, Februari 2024.

Salah satu transformasi terhadap buku ajar adalah digitalisasi buku ajar. Tujuan penelitian ini untuk 1) mengetahui validitas buku digital interaktif berbasis *realistic mathematics education* pada materi penjumlahan dan pengurangan pecahan; 2) mengetahui praktikalitas buku digital interaktif berbasis *realistic mathematics education* pada materi penjumlahan dan pengurangan pecahan; dan 3) mengetahui efektivitas buku digital interaktif berbasis *realistic mathematics education* pada materi penjumlahan dan pengurangan pecahan. Penelitian ini dilakukan di SDN 054906 Tebasan Lama dengan subjek penelitian yaitu siswa kelas V. Jenis penelitian ini adalah *research and development* dengan model Plomp yang terdiri dari lima aktivitas yaitu 1) Investigasi awal; 2) Perancangan; 3) Realisasi/konstruksi; 4) Tes, Evaluasi, dan Revisi; dan 5) implementasi. Instrumen penelitian yang digunakan adalah lembar observasi, wawancara, lembar validasi, angket penilaian praktisi, dan angket respon siswa, serta instrumen tes. Validasi dilakukan oleh ahli materi, media, dan bahasa. Teknik pengumpulan data dalam penelitian ini adalah observasi, wawancara, dan tes, dengan teknik analisis data uji validitas, tingkat kesukaran, daya beda, dan reliabilitas untuk instrumen tes, dan uji N-Gain. Hasil penelitian ini menunjukkan bahwa 1) buku ajar digital valid yaitu 98,1% (sangat valid) dari ahli materi, 98,1% (sangat valid) dari ahli media, dan 96% (sangat valid) dari ahli bahasa; 2) hasil uji praktikalitas menunjukkan bahwa 16 dari 20 siswa memberikan respon sangat positif setelah menggunakan produk dan mendapat penilaian dari praktisi sebesar 98,3 atau sangat praktis; dan 3) buku digital dinyatakan efektif dari analisis hasil belajar yaitu skor rata-rata post-test siswa lebih besar daripada skor rata-rata pre-test yaitu skor 55 pada saat pre-test dan skor 88 pada saat post-test, ketuntasan klasikal yaitu pada pre-test hanya 15% siswa yang tuntas, sementara pada post-test 100% siswa dinyatakan tuntas, dan aktivitas siswa yaitu hasil akhir menunjukkan persentase rata-rata aktivitas belajar siswa adalah 70% dengan kriteria “baik”.

Kata Kunci: Buku Digital Interaktif, *Realistic Mathematics Education*, Pemahaman Konsep

ABSTRACT

DESSY HAQIKI WULANDARI. Development of an RME-based Interactive Digital Book to Improve the Understanding of Fraction Concepts for Class V Elementary School Students. Thesis. Medan: Medan State University Postgraduate Program, February 2024.

One of the transformations of textbooks is the digitization of textbooks. The aim of this research is to 1) determine the validity of interactive digital books based on realistic mathematics education on addition and subtraction of fractions; 2) find out the practicality of interactive digital books based on realistic mathematics education on addition and subtraction of fractions; and 3) determine the effectiveness of interactive digital books based on realistic mathematics education on adding and subtracting fractions. This research was conducted at SDN 054906 Tebasan Lama with the research subjects being class V students. This type of research is research and development with the Plomp model which consists of five activities, namely 1) Initial investigation; 2) Design; 3) Realization/construct; 4) Test, Evaluation and Revision; and 5) implementation. The research instruments used were observation sheets, interviews, validation sheets, practitioner assessment questionnaires, and student response questionnaires, as well as test instruments. Validation is carried out by material, media and language experts. The data collection techniques in this research are observation, interviews, and tests, with data analysis techniques for testing validity, level of difficulty, distinguishing power, and reliability for test instruments, and the N-Gain test. The results of this research show that 1) digital textbooks are valid, namely 98.1% (very valid) from material experts, 98.1% (very valid) from media experts, and 96% (very valid) from language experts; 2) the results of the practicality test showed that 16 out of 20 students gave very positive responses after using the product and received an assessment from practitioners of 98.3 or very practical; and 3) digital books are declared effective from the analysis of learning outcomes, namely the average post-test score of students is greater than the average pre-test score, namely a score of 55 at the pre-test and a score of 88 at the post-test, classical completeness, namely in the pre-test only 15% of students completed, while in the post-test 100% of students were declared complete, and student activity, namely the final results, showed that the average percentage of student learning activity was 70% with "good" criteria.

Keywords: Interactive Digital Book, Realistic Mathematics Education, Understanding Concepts